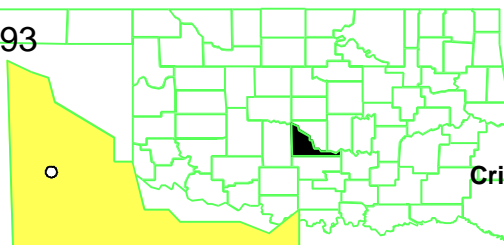


HARDAGE/CRINER

OKLAHOMA

EPA ID# OKD000400093



EPA REGION 6
CONGRESSIONAL DISTRICT 04
McClain County

Other Names:
Hardage Landfill
Criner Landfill
Criner/Hardage Waste Disposal
Updated: 03/26/97

Site Description

- Location:** ● 3/4 mile west of Criner, Oklahoma, on Highway 122, 30 miles southwest of Oklahoma City, McClain County.
- Population:** ● Approximately 20 within a 1 mile radius of the site.
- Setting:** ● Rural, agricultural area; nearest residence is at site boundary.
- Hydrology:** ● Bedrock is fractured shale/sandstone; fracturing contested by Potentially Responsible Parties (PRPs).
- Site is adjacent to (but not on) North Criner Creek floodplain.
- Creek alluvial aquifer is a source for drinking water remote downstream.

Wastes and Volumes

<u>Waste</u>	<u>Ground Water</u>	<u>Soil</u>
● 1,2 - dichloroethane	350 ppm	180 ppm
● 1,1,2 - trichloroethane	54 ppm	170 ppm
● tetrachloroethane	24 ppm	16,000 ppm
● trichloroethene	36 ppm	1,500 ppm
● toxaphene	---	160 ppm

(PPM = Parts Per Million)

- Other site contaminants include arsenic, solvents, pesticides, Polychlorinated Biphenyls (PCBs), oils, paint sludge, ink, and heavy metals.

Volumes in the 60 acre permitted area include:

- Main pit: Two acres, 15-20 feet thick.
- Liquids - 1,800,000 gallons
- Waste fill/sludges 174,000 cubic yards
- Sludge mound: 1.5 acres, 15-20 feet thick.
- Drum mound: 0.8 acres, 30-40 feet thick; may contain over 20,000 drums.

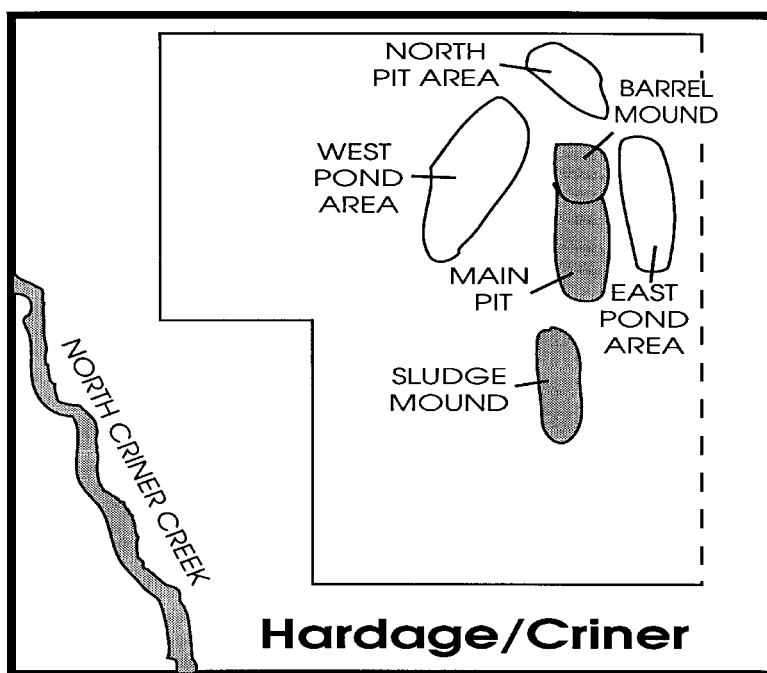
Site Assessment and Ranking

NPL LISTING HISTORY

Site HRS Score: 51.01
Proposed Date: 10/81
Final Date: 9/08/83
NPL Update: No. 1

- Site Assessment conducted 1980
- Site Operator had permit issued by the Oklahoma State Department of Health (OSDH), now Oklahoma Department of Environmental Quality (ODEQ).
- Site was fenced and access restricted by operator.
- EPA filed suit in 1980, expanded suit in 1982 to include CERCLA Section 106.

Site Map and Diagram



The Remediation Process

Site History:

- Waste pits received bulk, drummed liquids, and sludges.
- The site was divided into source control and management of migration operable units in 1985.
- The Hardage Steering Committee (HSC), a group of potentially responsible parties (PRPs) performed studies on site from fall 1986 through 1988, proposing a cap and slurry wall contrary to EPA's Record of Decision (ROD).

- September - November 1987, the Potentially Responsible Party (PRP), with EPA oversight, provided an alternate water supply to residents southwest of the site.
- March 1988, PRP erected a fence at the site to restrict public access.
- Court opinions on liability, past costs and remedy were rendered August 9, 1990. Liability and past costs were decided in favor of the United States while the court selected the PRP proposed remedy.
- The liable parties have filed appeals over past costs and one party is appealing its liability.

Health Considerations:

- Contamination of surface water, ground water, and surface soils has been documented.
- Potential for human exposure via direct contact, ingestion of contaminated soils, and inhalation of contaminants.

Other Environmental Risks:

- Contaminant seeps have been documented on site and are covered when found.
Seeps in the borrow pit area have forced the PRPs to investigate additional methods for collecting ground water for treatment and deep well injection.

Record of Decision

<p>Signed: November 22, 1989 Opposed by ODEQ and PRPs</p>

- The Hardage Record of Decision (ROD) was signed in November 1989, just prior to the trial. However, both the ODEQ and the PRP group, the Hardage Steering Committee, opposed the EPA chosen remedy.
- The issue was decided in Federal District Court in favor of the HSC.
- The project has moved forward under a court-ordered remedy in lieu of a traditional ROD.
- The remedy is split into two operable units, one for source control and the second for ground water migrating off-site.

Source Control:

- Institutional Controls to restrict access.
- Recovery of all pumpable liquids.
- Separation of the phases recovered by an on-site separation system.
- Off-site incineration of the phases recovered.
- Eventual cap of the source area.

Ground Water:

- Recovery of ground water migrating through the source area via a large trench.
- Recovery of ground water down-gradient from the source area via recovery wells.
- Cleaning the recovered water by air stripping and filtration.
- Water to be cleaned to standards applicable for discharge to North Criner Creek.

Other Remedies Considered

1. "No Action"

2. Capping with collection trenches

Reasons Not Chosen

Direct contact hazards, ground/surface water problems will increase

Free liquids would still be released from sources migrating vertically and laterally through fractured bedrock and contaminating aquifers as the situation deteriorates since no barrier exists at a shallow enough depth to make cut-off feasible.

- Fencing and capping activities to date have been implemented by the PRPs.
- By order of Federal District Court, all Remedial Design and Remedial Action (RD/RA) activities will be under a single schedule.

Community Involvement

- Community Involvement Plan: Developed 5/88
- Open houses and workshops: 2/90
- Original Proposed Plan: 3/86
- Subsequent Proposed Plan and Public Meeting: 10/89
- ROD Fact Sheet: 1/90
- Milestone Fact Sheets: 2/90 (RD/RA)
- Citizens on site mailing list: 152
- Constituency Interest: Concerned with ground and surface water contamination
- Site Repository: Purcell City Library, 919 North 9th Street, Purcell, OK 73080

Technical Assistance Grant

- Availability Notice: None - Pre-SARA site, little organized community interest, no identified citizens groups in site area (rural setting).
- Letters of Intent Received: None
- Final Application Received: N/A
- Grant Award: N/A
- Current Status: No TAG activity

Fiscal and Program Management

- **Remedial Project Manager (EPA):** Ruby Williams, 214/665-6733, Mail Sta. 6SF-RP
- **State Contact:** Hal Cantwell
- **Community Involvement Coord. (EPA):** Verne McFarland, 214/665-6617, Mail Sta. 6SF-P
- **Attorney (EPA):** James Turner, 214/665-3159, Mail Sta. 6SF-DL
- **State Coordinator (EPA):** Roberta Hirt, 214/665-8079, Mail Sta. 6SF-AO
- **EPA Oversight Prime Contractor:** Fluor Daniel
- **PRP's On-site Contractor** (Operation & Maintenance): Nationwide Environmental Services

Cost Recovery: PRP Lead (Enforcement)

- PRPs Identified: Approximately 350
- Viable PRPs: Over 200; Group consolidated as Hardage Site Remedy Corporation (HSRC)

Present Status and Issues

- HSRC sought and received relief from the Court Order on three issues:
 1. Number of Recovery Wells Required: Court ordered 54 recovery wells and HSRC has stated that current information is that no more than 16 wells are required to perform the function.
 2. Recovery of all pumpable liquids: Court order states all pumpable liquids to be recovered for off-site incineration. HSRC states that bottom layer in source area showing more solid than liquid properties and that recovery of this substance is "ultra hazardous" due to the recovery process.
 3. Discharge to North Criner Creek: at the request of OSDH, HSRC petitioned for a change to the order allowing for deep well injection rather than discharge to the creek. In August 1993, the Court modified the remedy to allow discharge of treated ground water to an on-site non-hazardous injection well.

Benefits

- The initial actions taken by the PRPs to excavate or decontaminate soils and cap the source areas as described above have reduced the potential exposure of nearby residents to site wastes.
- Additional protective activities include monitoring of attenuation in down-gradient wells, tracking the volume of contaminants recovered and incinerated, and tracking the volume of water recovered from trench and water wells.
- The site construction effort was completed in February 1995. By mid-March 1995, the entire remedy had been constructed and tested and the six-month start-up period began. On September 6, 1995, the six month start-up period was successfully completed and the constructed remedy was accepted by the HSRC for long-term operation and maintenance. The HSRC contracted with Nationwide Environmental Services (NES) to provide the long term operation and maintenance services for the completed remedy. A construction completion report will be issued by EPA in 1997.